

# **APPENDIX I**

## **Sample Cleanup and Removal Plan**

### **Backforty Dumping Area Cleanup and Removal Plan**

#### **A. INTRODUCTION**

##### **GENERAL LOCATION**

**This Cleanup and Removal Plan has been developed for the site known as Backforty Dumping Area. It is located in and around a natural watercourse known as Water Wash. Appaloosa, Arizona is the nearest town, approximately 1.5 miles west of the site. The site is located entirely within the reservation boundaries of the Native American Tribe. The natural course of the wash runs in the direction of northeast to southwest.**

##### **REGULATORY STATUS**

**A Cleanup and Removal Plan is the best and most practical way to assure that all necessary activities and their costs are included in planning for the clean up process. A Cleanup and Removal Plan will also keep to a minimum unforeseen incidents which result in lost time, cost overruns, accidents, or inadequate site clean up.**

**The Backforty Dumping Area is located in and immediately adjacent to a natural watercourse, thereby violating the Clean Water Act (40 CFR Part 230). In addition, there is an airport serving piston-type aircraft within 5,000 feet of the Backforty Dumping Area creating a potential bird hazard for aircraft. Businesses and residences are also located within a mile of the site. Business are responsible for contracting for removal of their own solid waste off the Native American Tribe Reservation.**

**JURISDICTION - See Appendix IV**

## **INFORMATION USED**

There are no maintenance and/or operational records available for this site. Information contained in this plan was obtained by visits to and visual observation of the site on July 31, 1998 and August 11, 1998 and represents the existing conditions of the site at that time. These visits and observations were made jointly by Jane Jones, representative for the Native American Tribe, and John Franks, site supervisor for Arid Environments Engineering, Inc., contractor for the clean up of this site.

## **B. ENVIRONMENTAL AND SITE DESCRIPTION**

### **LOCATION**

The seven discrete waste disposal areas that constitute the Backforty Dumping Area are all located along the approximately 1.5 mile length of Water Wash. Water Wash begins less than a quarter mile south of the fairgrounds, which are in turn located on the eastern edge of the town of Appaloosa.

### **POPULATION**

The town of Appaloosa has a population of 4,513 (1990 Census). Population in the surrounding area is about 5,225 persons. This is the highest population density on the Reservation. There are residences in the area immediately around the site, the closest being 0.6 miles from the northeastern end of the Wash. The community is concerned that hazardous wastes will be hauled through town to a disposal facility. These concerns will be addressed in the Public Participation Plan.

### **SITE USE**

The Backforty Dumping Area received periodic waste deposits from the Appaloosa community for approximately 10 years prior to January 1995. The Backforty Dump is no longer used since an open top bin was made available in the town of Appaloosa in January of 1995. Household solid waste is accepted there for a fee. Because of the fee and the fact that there is no convenient alternative disposal for special wastes such as tires and white goods, it is reasonable to assume that casual disposal at Backforty

Dumping Area still occurs from time to time. This site has never been maintained in any way. It was simply the convenient and accepted place to dispose of waste as people settled in the area as the town grew.

#### **SITE SIZE AND FEATURES**

**(a-d) Area:** There are seven discrete waste disposal areas within the Backforty Dumping Area. They extend for approximately 1.5 miles along the length of Water Wash. The average width of the disposal areas is 50 feet and the average depth is 20 feet. There is no sewage sludge or industrial waste at any of the disposal areas. It is possible that compressed gas cylinders are present since propane gas was used for heating and cooking prior to 1987 when electricity became available in Appaloosa. See below for the area, volume of waste, distribution, and type of waste present for each disposal area.

**(e) Geology and natural features:** See individual descriptions for location and gradient. The following geological information applies to all waste disposal areas.

- 1) Depth to groundwater- 20 feet
- 2) Soil geology-  
soil type: silty clay  
geological strata to groundwater: silty clay
- 3) Annual precipitation- 18 inches per year, annual evaporation 140 inches per year. This area is subject to heavy cloudbursts resulting in immediate heavy run-off and/or flash flooding
- 4) Aquifer information- confined
- 5) Soil permeability- permeable
- 6) Drainage- located in a watercourse

**(f) Industries, businesses, hospitals, or schools.** There is one business, a restaurant, located within one mile of the site. There are no industries, hospitals, or schools.

**(g) Potential hazards-** See individual descriptions. Except as noted for disposal areas # 2 and # 4, no temporary access roads will be required for this remediation project. Wastes will be hauled approximately 63 miles to the XYZ Landfill. The waste must be trucked through the town of

Appaloosa. Citizen concerns over this process will be addressed in the

Public Participation Plan and will include hours of operation, proper cover for loaded trucks, etc.

(h) Proximity to wells and other water sources - There are no wells or other water sources within one mile. As noted in (e) 3 above, however, this area has the potential to become a watercourse after heavy rains.

(i) Proximity to sewage lagoons - There are no sewage lagoons within one mile of the site.

(j) Other information- There are residences and one small airport (serving piston-type aircraft) within one mile of the site. There are no buildings on the site. Two major access dirt roads have been blocked off by fencing and currently only one unimproved dirt road provides access. There are no electrical or natural gas lines within one mile of the site. A gray water drain from the rodeo grounds passes under disposal area # 7 and opens into the wash.

#### **SITE HISTORY**

See above under *Site Use*. There are no records about the site. There are indications that this area was used by local residents for disposal of the usual household wastes and there were no restrictions on what was placed there. There are no indications that any company or individual was responsible for the operation of the Backforty Dumping Area at any time. This is a small agrarian community with no industry or sewage treatment facilities. With the exception of household hazardous waste and special wastes such as automobile bodies and white goods, it is unlikely that hazardous wastes in appreciable quantities will be found at this site. Anecdotal evidence indicates that the site occasionally caught on fire but there was no deliberate or routine burning. There is no evidence to suggest unexploded ordnance may be present at the site.

#### **INDIVIDUAL WASTE DISPOSAL AREA DESCRIPTIONS**

Disposal Area # 1 Estimated measurements are 35 yards long X 20 yards wide X 2 yards deep. Area #1 contains approximately 1400 cubic yards of solid waste. Waste is located in a trench, there is no appreciable amount of material scattered out side of the trench. Potential hazardous waste items are used car batteries, labeled/unlabeled 5-gallon steel containers, labeled and unlabeled 1-gallon paint cans, water heaters and washing machines. The washing machines still contain their motors. Waste types are household, car body (without motor, transmission, etc.), oil waste,

automobile parts, construction debris, yard waste, textiles, white goods and partially decayed animal carcasses. Exercise caution with construction debris as it may contain asbestos or lead. See Appendix II *Hazardous Materials* for mandatory reporting and disposal information. Waste is located in the wash along the northwest wall. The walls of the wash are near vertical with a slope approaching 90 degrees.

**Disposal Area # 2** Estimated measurements are 150 yards long X 50 yards wide X 0.5 yards deep. Area contains approximately 3750 cubic yards of solid waste. Waste is located in a trench, there is also mounded waste and considerable surface scatter. Potential hazardous waste items are car batteries, unlabeled 1-gallon paint container, five-gallon asphalt petroleum container and three empty 55-gallon drums. Construction debris, textiles, yard waste, household waste, furniture, car parts and oil waste are also present. Solid waste is located in the wash, on the slope and on top of the northwest wall. The south wall of the wash is near vertical. The north wall of the wash has a slope averaging about 80 degrees.

**Disposal Area # 3** Estimated measurements are 30 yards long X 20 yards wide X 1 yard deep. Area contains approximately 600 cubic yards of solid waste. Waste is located in a trench with little surface scatter. There do not appear to be any potentially hazardous waste items in this area. Waste types are household, textiles, furniture, oil waste and automobile parts. Solid waste is located in the wash along the northwest wall. The walls of the wash are near a vertical slope approaching 90 degrees.

**Disposal Area # 4** Estimated measurements are 118 yards long X 12 yards wide X 1 yard deep. Area contains approximately 1416 cubic yards of solid waste. Waste is surface scatter that will require manual clean up. Potential hazardous waste items are refrigerators, water heaters, washing machines. All of these items contain their motors/compressors. Waste types are household, construction debris, household hazardous waste, white goods, auto parts, oil waste, furniture, and textiles. Waste is located along the unimproved dirt road and in the wash. The northwest wall of the wash has a slope averaging about 80 degrees. The southeast wall is vertical.

**Disposal Area # 5** Estimated measurements are 125 yards long X 5 yards wide X 0.5 yards deep along the unimproved dirt road. Estimated measurements for solid waste buried along the north wall of the wash are approximately 20 yards long X 10 yards wide X 3 yards deep. Area contains approximately 920 cubic yards of solid waste, approximately 320 cubic yards located along the unimproved dirt road and approximately 600

cubic yards buried along the north wall of the wash. Waste is surface scatter along the road with some in a shallow trench along the wall. There do not appear to be any potentially hazardous waste items in this area. Waste types are household, construction debris, white goods (with motors/compressors), furniture, oil waste and automobile parts. The northwest wall is vertical and the southeast wall has a slope approaching 80 degrees.

**Disposal Area # 6** Estimated measurements are 10 yards long X 20 yards wide X 1 yard deep. Area contains approximately 200 cubic yards of solid waste. Waste is mounded. There do not appear to be any potentially hazardous waste items in this area. Waste types are household, construction debris and asphalt debris. Solid waste is located along the north wall of the wash. The walls of the wash are near vertical with a slope approaching 90 degrees.

**Disposal Area # 7** The wash at this point is estimated to be approximately 10 yards long X 10 yards wide X 0.5 yards deep. Area contains approximately 50 cubic yards of solid waste. Waste is mounded and does not appear to contain any potentially hazardous waste items. Waste types are household and construction debris. Waste is located along the slope of the northwest wall of the wash. The north wall has a slope approaching 80 degrees and the south wall is near vertical.

## **C. REMEDIATION PLAN**

To reduce the potential exposure to infectious agents and products, the Native American Tribe's Environmental Health crew will trap rodents for 32 days, beginning three days prior to the arrival of the remediation crew. The partially decayed animal carcasses identified in disposal site #1 will be burned on the spot using gasoline.

Recycling centers for glass, metals, and white goods have been identified. When feasible, segregation and transportation of these materials to recycling centers has been arranged. Written confirmation that XYZ Landfill will accept wastes from Backforty Dumping Area is on file at the Site Supervisor's office and will become part of the permanent record of this remediation project. It is not necessary to do any on-site processing of wastes before final removal from these disposal areas. Hazardous wastes, tires, white goods, and automobile bodies will be disposed of separately. See below for details.

Temporary modular buildings will be used for the Site Supervisor's office, equipment maintenance area, and storage areas for equipment and supplies. The contractor, Arid Environments Engineering, Inc., shall provide these temporary structures and be responsible for them during the project. Arid Environments Engineering, Inc. shall also remove these structures when work has been completed. Because of the danger of flash flooding in the area remediation work will be conducted only during dry months of the year. If thunderstorms occur while work is in progress work will be stopped immediately and the workers evacuated. See the Health and Safety Plan for details.

Waste in trenches or mounds will be picked up with a front-end loader and placed into 40-cubic-yard bins. It may be necessary for workers to use lines to descend to the bottom of the wash in order to retrieve certain wastes. For those areas which have surface-scattered waste manual pick-up will be necessary. Workers outfitted with long tongs or pointed stakes shall collect such scattered waste in large plastic bags. These bags will be collected as necessary and also removed to the waste bins. Suggested bin locations during the clean up are on the north side of disposal area # 2 and on the north side of disposal area # 5. These bins will be taken to a staging area near disposal area # 5 and the waste transferred to dump trucks. A dragline and pulleys will be used to remove waste from the wash and it will also be placed in dump trucks at the rim. These trucks will then be covered and proceed to XYZ landfill for waste disposal. The firm of J.C. Dumping will be responsible for transport of the waste from the site to the landfill. A temporary access road into the wash may be necessary at disposal areas # 2 and # 4.

The following items will be separated and properly disposed of by Southwest Hazard Removal Company:

1. Hazardous or potentially hazardous waste;
2. Tires.

The suggested workforce includes at least one Field Supervisor, one Health and Safety Officer, one heavy equipment operator, and one laborer for each of the areas being worked. Local workers will be hired to make up the labor force. The local metal salvaging company, AFH, Inc. has been hired to remove all automobile bodies and white goods from the site.

Necessary equipment for this project includes one front-end loader, one backhoe, one 200 horsepower dozer, and 193 40-cubic-yard bins.

Costs to clean up and remove wastes from this site are based on material amount and sources, labor, and equipment. Estimated cost: \$151,047.90. The project is expected to last 29 working days. Estimated total volume of solid waste (all disposal areas): 8336 cubic yards. See Table I-1 for tasks, equipment and costs.

#### **D. RECLAMATION PLAN**

It will be necessary to reconstruct the natural watercourse of Water Wash and restore it to its original condition. To accomplish this approximately 600 cubic yards of backfill will be obtained from the excavation of a building site on tribal land to the north of the town of Appaloosa. There will be no cost for obtaining this material. It will be placed along the northwest wall of disposal area # 5. Boulders and cement debris from disposal area # 7 will also be moved to this area for erosion control. A 9-yard end dump truck, a dozer, and frontloader will be necessary for transportation and placement of backfill and boulder and cement debris. Personnel will include heavy equipment operators for each piece of equipment, two laborers, and one Health and Safety Officer. Contact the Army Corps of Engineers regarding necessary permits, etc.

##### **Costs**

Materials transportation:	\$375.00
Labor:	\$1,675.00
Total	<u>\$2,050.00</u>



## TABLE I-1    COST ESTIMATE

### COST ESTIMATE

<u>Activity</u>	<u>Estimated Cost</u>
<b><u>1. Disposal of 208 forty cubic yard bins at \$600 per pull</u></b>	<b>\$124,800</b>
Additional landfill fee:	
approximately 38 tires @ \$6.50 each	\$247.00
approximately 19 white goods @ \$10.50 ea.	\$199.50
subtotal	\$125,246.50
<b><u>2. Heavy Equipment:</u></b>	
front end loader rental fee for 29 days @ \$437.50/day	\$12,687.50
bulldozer rental fee for 2 days @ \$225.00/day	\$450.00
dump truck to haul borrow material, 1 day @ \$73.90/day	\$73.90
subtotal	\$13,211.14
<b><u>3. Safety Training:</u></b>	
OSHA safety/equipment training, 10 people @ \$25/ student	\$250.00
<b><u>4. Personnel:</u></b>	
Heavy equipment operators:	
salary for front-end loader operator @ \$20/hr for 29 days	\$4,640.00
salary for bulldozer operator @ \$20/hr for 2 days	\$320.00
Technical Staff:	
safety Officer @ \$15/hr for 29 days	\$3,480.00
clean-up crew - five laborers @ \$7/hr. for 10 days	\$2,800.00
subtotal	\$11,240.00
<b><u>5. Additional Equipment:</u></b>	
signs, fencing material, public relations	\$1,000.00
plastic bags and trash picks	\$100.00
subtotal	\$1,100.00
<b>TOTAL</b>	<b>\$151,047.90</b>

## **E. HEALTH AND SAFETY PLAN**

*[Portions of this Health and Safety plan are derived from a Health and Safety Plan developed by the Bureau of Indian Affairs, Navajo Office.]*

### **1) Potential Hazards**

#### **PHYSICAL - associated with working near construction equipment:**

**Crumbling high walls of canyons, washes and arroyos**

**Falling objects when on high walls**

**Stressed cables and/or ropes**

**Vehicles**

**Cuts, bruises, and injuries from handling solid waste**

**Trips, falls and slides (personal and land)**

**Flying objects**

**Glare**

**Exploding aerosols, compressed gas cylinders, and cans**

**Heat injury**

**Fire/Combustible gas ignition**

**Dust**

#### **BIOLOGICAL**

**Hantavirus**

**Plague**

**Unknown viruses and bacteria**

**Venomous reptiles**

**Venomous and other insects**

**Poisonous or toxic plants.**

## CHEMICAL

Particulate matter from asbestos, burning waste, and plants such as poison oak or poison ivy.

Unknown vapors

Vehicle exhaust

## OTHER

Inclement weather

## 2) PRECAUTIONS

GENERAL- All workers shall work in the "buddy system", maintaining visual contact with each other when on the job site. Workers shall not wear headphones or any other device that could impair hearing heavy equipment alarms or other warnings. Respiratory protection shall be worn if workers must enter any area in which there may be an excessive concentration of airborne contaminants. Workers actually handling or in the immediate vicinity of solid waste that is being moved shall wear at least a half mask respirator with twin NIOSH approved high efficiency cartridges. Workers required to wear respirators shall receive six hours training in the use and care of respirators. Workers subject to dust other than solid waste dust shall be required to wear quarter-face dust masks.

PERSONAL PROTECTIVE EQUIPMENT - All employees/workers on these projects shall be issued safety equipment and be required to wear the following: hard hat, eye protection (goggles with sun glasses or shatter-proof sun glasses), appropriate respiratory protection, long sleeve shirt, long pants, Tyvek overalls, steel-toed boots (over boots are required for those actually working in the site), and latex gloves under heavy leather work gloves. This equipment shall be worn whenever actively working on the job site. If any of the issued equipment becomes damaged, torn, etc., such that the effectiveness is questionable the worker will immediately be removed from the work area and have the damaged item replaced or repaired prior to reentering the job site. Fire extinguishers should also be readily available to personnel.

FIRST AID - The Contractor shall insure that there is a first aid kit in

each vehicle on site complete with antiseptics and bandages. The Contractor/Site Supervisor and Health and Safety Officer shall also have a list of current, local emergency phone numbers, or other means of emergency communication, available in case an injury requires professional emergency medical services. Addresses and phone numbers of nearby hospitals, emergency rooms or trauma units should also be included.

**PERSONAL HYGIENE** - The Contractor shall insure that there is an emergency eye wash stand, portable toilet, and an adequate supply of potable water for drinking and washing prior to eating or leaving the work site. Tyvek<sup>1</sup> overalls and any other outer personal protective clothing shall not be worn outside the job site or to an employee's home. Soiled Tyvek overalls will be collected daily in a paper or plastic bag and properly disposed of. The project Health and Safety Officer shall assure compliance with this mandate.

**INCLEMENT WEATHER** - During the monsoon season violent afternoon thundershowers may occur and may be accompanied by lightning and/or flash flooding. These conditions are serious and may occur without warning. At the beginning of each workday the Health and Safety Officer or the Site Supervisor shall review the weather forecast, paying particular attention to conditions up stream from the work site. The Health and Safety Officer or the Site Supervisor may order a work stoppage if conditions warrant such action. Workers on projects conducted during this season shall take the following precautions. Electrical storms: If a crane is in use it shall be lowered and all work stopped. Workers shall assemble in enclosed, rubber-tired vehicles until the storm passes or the decision is made to stop work for the day. Should a worker be caught away from a vehicle he/she should seek shelter in a low spot, such as ditches or concrete culverts, away from trees or large rocks. Thunder storms/heavy rain: flash flooding may occur during heavy rains. Workers in arroyos or washes should immediately evacuate these areas. The Site Supervisor shall conduct a head count to ensure that all workers are safe and accounted for whenever inclement weather causes a work stoppage.

### 3) SPECIFIC RISKS

a) Whenever heavy equipment is in the area, workers should be alert to the possibilities of injury due to vehicles backing up or sliding. The dust generated by churning tracks or wheels can be irritating to the respiratory system and carry disease-causing organisms. The exhaust from diesel engines is also injurious due to the toxic components released during combustion.

b) The edges of canyons, washes, arroyos, and landfills can be unstable. Workers are advised to stay well back from such areas, unless secured by OSHA approved safety harness systems. If a worker is being lowered into a canyon or arroyo, the lowering system shall be of the involuntary type so that a worker is secured regardless of the state of consciousness.

c) When scaling the sides of a canyon or high wall objects may fall from above onto a worker. Therefore, hard hats shall be worn on slopes and no more than one person at a time shall be on the slope. Personnel above or below the climber shall watch for falling materials. If any objects begin to fall, these personnel shall shout a warning to the climber so they may take evasive action.

d) If cables and pulley systems are used to haul materials up the face of a slope, all workers shall stand well back from the tightening cable, preferably behind shelter. Any person who notices a frayed or otherwise unsafe cable shall immediately report it to the Site Supervisor and Health and Safety Officer.

e) A valid state drivers license or commercial operators license is required for operators of all vehicles used at closure/clean up sites. No one shall ride in the bed of an ungated truck. All riders in a gated truck shall sit or lay down in the cargo bed and keep all parts of the body inside the truck bed.

f) The possibility of cuts or other open wounds exists when moving and collecting solid waste. Therefore, each worker must have had a Tetanus shot within the year prior to performing activities on this project. If a worker sustains an open wound he/she shall report immediately to the Site Supervisor for first aid. Such aid shall include cleansing the wound with soap and water, hydrogen

peroxide and/or iodine or an iodine compound such as "Betadine"<sup>1</sup>. The wound shall be dressed with an air and dirt tight bandage. If the Site Supervisor or Health and Safety Officer believes the wound is serious enough, the worker shall be evacuated to a medical facility for further treatment.

g) Workers shall be made aware of the possibility of tripping and falling into piles of solid waste. Such falls have the potential to cause injury and damage personal protective equipment. Waste piles are unstable, therefore workers shall not climb onto piles of solid waste.

h) When solid waste is being consolidated or otherwise moved, the heavy equipment will often cause parts of the load to be in compression. The stress on the debris and the subsequent release of that stress may cause metal and wood objects to fly out of the waste piles. Therefore, no worker shall be closer than 25 feet from a pile of solid waste when it is being moved.

i) Exposure to bright sunlight and/or reflected light from polished surfaces and freshly scratched metal over long periods can cause deep eye damage and result in degeneration of vision. Workers shall wear sunglasses whenever the Health and Safety Officer or Site Supervisor believes that conditions warrant. A worker may choose to wear such glasses any time he/she feels the need.

j) Solid waste often contains defective or partially used aerosol cans. These aerosol cans may contain such things as spray paints, pesticides, oven cleaners, spot removers, and/or petrochemicals. When these cans are compacted in the landfill or crushed by vehicles, they can release residues of the contents. These contents can burn the skin and clothes, release toxic vapors, and severely damage eyesight. Often, aerosol and other cans contained in a trash pile become unstable and can explode when heated by the sun or disturbed by handling. Workers shall be cautioned about picking up individual cans by hand.

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<sup>1</sup> The use of a brand names in this document does not constitute an endorsement by the USEPA. Brand names are used as examples of appropriate products.

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k) There exists a strong possibility for heat injury - heat distress, heat exhaustion and heat stroke - on projects being conducted during the summer months. Buddies shall observe each other for changes in the color of the skin and breathing rhythms. The Site Supervisor shall provide an air thermometer and take hourly temperature readings, which shall be recorded in the daily log by the Health and Safety Officer. Once the air temperature reaches 90° F 10-minute rest periods will be provided each hour. The Site Supervisor shall provide adequate shade, adequate cool water, and electrolyte replacement drinks, for the workers. The signs of heat exhaustion are a deep reddening of the skin, panting, and profuse sweating. The individual shall be removed to a cool or shady area and allowed to rest. In cases of heat stroke, the skin becomes pale, breathing becomes shallow and rapid, sweating stops, and the skin becomes dry. The victim can rapidly lose consciousness. *These conditions are life threatening and progress rapidly.* If any of these signs occur the victim must be cooled down as rapidly as possible. Wet compresses, ice rubbed on the wrists, and fanning will help. If conscious, the victim shall be encouraged to drink lots of cool water or preferably an electrolyte replacement drink. *Emergency medical assistance is mandatory.*

l) Asbestos in the form of roofing tiles, insulation, and/or broken pipe may be present in waste piles. 40 CFR Part 61.50 sets forth reporting requirements and mandatory standards for disposal of asbestos containing wastes. If such wastes are found at any site a contractor licensed to properly dispose of asbestos must be used for such disposal. Any materials that are suspected of containing asbestos should be thoroughly soaked with water prior to being handled. Paper dust masks are not effective for asbestos particles. For questions concerning either a potentially hazardous material and/or handling and disposition of potentially hazardous materials call the state or federal EPA.

m) Often there are fires, or the residues of fires, in the landfill trenches or scattered around surface dumps. Manipulating landfill debris can provide oxygen or fresh fuel to smoldering debris, which can cause fires to flare up. If a fire develops, the worker(s) shall notify the Health and Safety Officer. All workers shall be evacuated from the area of the fire until the Site Supervisor has investigated and determined the level of threat. Appropriate measures to extinguish the fire shall be used prior to resuming work.

n) There are very few reasons for a worker, other than an equipment operator, to enter any active trench or trench under construction. Workers on foot shall not be in a trench while heavy equipment is operating there. Only one worker at a time shall be in a trench where work is being conducted in the surrounding area.

**BIOLOGICAL HAZARDS-** If there is no evidence of biological contamination (plague or hantavirus) portions of this plan may be relaxed.

a) The dusts and vapors generated by disturbing mounds of solid waste can contain fungal spores, irritating products of decomposition, and disease bearing particulate. The foreman shall have a supply of dust masks available and ensure that workers wear them should conditions warrant or if a worker requests a mask. Masks shall be disposed of at the end of a work shift or more often if necessary. No worker shall wear another's mask. Paper masks provide no protection against bacteria, fungal spores, or viruses.

b) The threat of Hantavirus may exist at many work sites (see Appendix V for information on Hantavirus). Rodents are attracted to solid waste and are known carriers of the Hantavirus. Rodent nests and dead rodents shall be avoided by workers. The Site Supervisor shall have available a two-gallon pump sprayer containing a 1% aqueous chlorine bleach solution to soak any rodent nests discovered before moving solid waste. Any dead animals found at the site area shall be sprayed with the same solution prior to handling and disposal. Mechanical equipment such as frontloaders and dozers shall be used for handling and burial. If mechanical equipment is not available, tongs or shovels shall be used for handling dead animals and nests. Under no circumstances shall workers handle dead animals with their hands, even if gloved. Any personal protective equipment, boots, gloves, etc; that has come into contact with dead rodents or rodent nests shall be disinfected with a 1% aqueous chlorine bleach solution. Under no circumstances shall workers be allowed to leave the site without undergoing decontamination procedures.

To minimize exposure to biological hazards, rodent trapping may begin one week prior to commencing work and continue daily throughout the project.



**Note: Trapping shall be conducted by personnel trained and certified to conduct rodent trapping. Under no circumstances should untrained personnel attempt to conduct animal trapping.**

**c) Plague (*Yersinia pestis* infection) occurs naturally in some wild rodent populations throughout much of the western United States, although most (90%) human cases occur in only four states (Arizona, California, Colorado, and New Mexico). The disease is transmitted through the bites of infectious rodent fleas, direct contact with infected animals, or, very rarely, inhalation of respiratory secretions from humans or cats having respiratory plague. To protect against flea bites Tyvek overalls shall be worn with the legs tucked into work boots and/or taped. Any bites shall be reported and treated with antiseptic as soon as noticed. The risk of transmission of plague to humans in the United States is greatest when outbreaks of plague occur among susceptible wild rodent hosts, such as prairie dogs, cats, and some burrowing ground squirrels. As with Hantavirus, rodents and cats on the work site shall be avoided. Operations that bring workers in close proximity to flea-infested rodent nests or burrows, or result in the disturbance of these structures, are particularly likely to increase human plague risks. Workers are advised always to avoid contact with any sick or dead animals. It is recommended that the CDC publication Prevention of Plague (citation follows) and the Health and Safety Plan of this document be consulted for guidance in worker protection.**

**Citation: CDC. 1996. Prevention of Plague. Recommendation of the Advisory Committee on Immunization Practices (ACIP). Morbidity and Mortality Weekly Report-Recommendations and Reports. 45:RR-14;i-iv and 1-15.**

**d) Other viruses and bacterial infections can be minimized through basic good hygiene. Workers shall wash their hands prior to eating, smoking, etc. The work uniform shall not be worn off the work site. A portable toilet will be available for use.**

**e) Poisonous snakes may be encountered during the movement of solid waste. Workers shall stay back from piles of trash being moved. Additionally, workers shall not place their hands under any boards, white goods, mattresses, etc., until the object has been**

moved at least once by mechanical equipment.

f) The same precautions for snakes applies to venomous insects; scorpions, wasps, hornets and biting flies. Most flying insects are attracted to sweet smelling after-shaves, deodorants, perfumes and soaps, as well as body heat. Workers shall be advised to avoid the use of such products during work on solid waste sites. Mosquito sprays and insect repellents shall be worn if the Site Supervisor deems it necessary for worker protection, or if a worker desires to do so.

g) Used truck and automobile tires provide an ideal habitat for rodents, snakes, and poisonous insects such as mosquitoes, spiders, and scorpions. In wet areas water-filled tires serve as a breeding ground for mosquitoes and constitute a continuing public health threat because of the potential contribution they can make to outbreaks of encephalitis and other mosquito transmitted diseases. Rodent nests in discarded tires also have the potential to spread plague and Hantavirus if they are moved without proper decontamination. It is essential that discarded tires be decontaminated prior to their removal from the site to eliminate the spread of disease vectors to other areas.

h) There can be poisonous plants, such as poison oak or ivy, in and around the work areas. Workers shall avoid these plants. Additionally, the smoke from burning these plants can be particularly toxic, producing acute respiratory distress. Under no circumstances shall burning of these plants be allowed at or near the work site. Workers who are subjected to smoke from burning poisonous plants shall be evacuated from the area and taken to medical facilities for treatment.

#### **4) HEALTH AND SAFETY OFFICER**

All projects shall have at least one Health and Safety Officer. In situations where the Health and Safety Officer cannot observe the entire work area, such as the rim area and bottom of a canyon, wash or arroyo, two or more Health and Safety Officers shall be required. Following are the qualifications for and the duties of a Health and Safety Officer. Table I-2 provides the cost for Health and safety activities.

**a) The Health and Safety Officer shall have completed the 40 hour HAZWOPER Health and Safety training and have current recertification.**

**b) On the morning of the first day of the project, the Health and Safety Officer shall conduct a briefing for all workers explaining each portion of the safety plan, including the contingency plan for emergencies. Adequate time shall be allocated to ensure that workers understand all aspects of the health and safety plan.**

**c) The Health and Safety Officer shall conduct a safety briefing each morning. The Health and Safety Officer shall use examples out of the Health and Safety Plan or observed unsafe practices as talking points.**

**d) The Health and Safety Officer shall maintain a daily safety log noting the date, weather conditions, hourly temperature, visitors, including duration of visit, number of workers on the job site, and any injuries.**

**e) Less serious injuries should be noted in the daily log. In conjunction with the Site Supervisor, the Health and Safety Officer shall investigate any injury. A written report shall be prepared for any injury necessitating a visit to a medical facility, requiring hospitalization, or resulting in death.**

**f) Each day the Health and Safety Officer shall ensure that the Site Supervisor has a supply of fresh potable water, electrolyte fluids, bandages, 1% aqueous chlorine bleach disinfectant spray, Tyvek plastic overalls, dust masks, gloves, etc., for distribution to the workers.**

**g) During weather emergencies and periods of potential heat injury, the Health and Safety Officer shall ensure that there is adequate shelter and that appropriate rest breaks are taken by the site workers.**

**h) The Health and Safety Officer shall periodically walk the site observing safety practices and issuing warnings, as appropriate.**

i) The Health and Safety Officer shall report any flagrant violators of safety practices to the Site Supervisor. In cooperation with the Site Supervisor, the Health and Safety Officer shall evict flagrant violators.

j) The Health and Safety Officer shall serve as the local government's representative to unexpected visitors to the site. For their safety, visitors shall be escorted while on site and kept well away from the working areas.

k) The Health and Safety Officer shall refer the media to the appropriate regulatory agency Supervisor for information.

#### **5) PROTECTION OF THE PUBLIC**

a) Work at a solid waste site can be hazardous. The public shall not be allowed at site closure/clean up projects. The Site Supervisor shall establish tape barriers at the entrance to the work site and post signs indicating the limited access conditions. The public shall be asked to vacate the premises. The Health and Safety Officer shall insure that no one passes these tape barriers without the proper safety equipment and orientation. The Health and Safety Officer or Site Supervisor shall accompany legitimate visitors on the site. These include agents of the local, state, tribal, or federal governments performing official duties directly connected to the closure/clean up site.

b) News media personnel may want to tour the site and seek statements from the workers about the project. News media personnel are prohibited from entering the work site due to safety restrictions. They shall be instructed to contact the appropriate local, state, tribal, or federal government's regulatory agency Supervisor for information.

c) The Site Supervisor shall insure that yellow tape barriers are erected around any open trench at the end of the work day. "No Trespassing" signs shall be posted at the entrance to the work site at the end of each working day.

d) Each load of waste shall be disinfected with a 1% aqueous

chlorine bleach solution as it is loaded into a transportation container.

e) All loads being transported shall be covered sufficiently to prevent loss of material during transport. If the nature of the waste may pose a threat to the public along the route to the designated MSWLF receiving it, appropriate warnings shall be issued to those likely to be affected. Containers with waste left at the site shall be covered overnight. Cover shall be sufficient to prevent animal invasion.

#### **Table I-2 Health and Safety Costs**

Personal protective equipment:	\$523.00
Shovels, tongs, sprayers, etc.:	\$261.00
Pulley & cable systems:	\$281.00
First aid supplies:	\$101.00
Portable toilets, rental:	\$247.00
Fire fighting equipment, rental:	\$132.00
Rodent eradication program:	\$471.00
Tape barriers, signage:	\$ 64.00
Labor:	\$2,683.00
Total	<u><u>\$4,763.00</u></u>

#### **F. PUBLIC PARTICIPATION PLAN**

Announcements of the upcoming clean up and removal operation will be placed in the local newspaper, one each week for the four weeks preceding the start of the clean up procedure. Each notice will specify site locations and projected start/finish dates. Notice will be given that sites will be cordoned off and quarantined. Parental cooperation in keeping children away from the sites will be requested. Before and after photos will be taken and published along with a story commending those who participated in the clean up and removal operation.

A public meeting will be held one month prior to the project start date at

the Tribal Council Offices to address any public concerns. Information on proper waste disposal and recycling will be made available at the meeting as well as pertinent excerpts from the Illegal Dumping Codes.

Appropriate signs warning the public shall be posted at the work site as required in the Health and Safety Plan. Warnings to the public along the transportation route to the MSWLF site receiving the waste shall be issued as necessary.

**Table I-3 Public Participation Costs**

Newspaper Notices:	\$256.81
Public Meeting:	\$100.00
Photography:	\$ 23.90
Signage:	\$ 56.74
Total	<u>\$437.45</u>

#### **G. RECORD KEEPING**

Records of daily clean up and removal activities will be maintained on site by the Site Supervisor, John Franks, telephone number (602)555-5555, during the clean up/removal process. This location information shall be posted at the main entrance to the work site during the clean up/removal process. When clean up removal has been completed all daily records, the final report, and the certification of completion will be maintained at the Tribal Council Offices at 234 Spotted Horse Way, Appaloosa, Az. 89054. Tribal Chair Jane Jones, telephone number (602) 555-1234, shall be responsible for all records.

Generating the necessary records will require the services of the Tribal Council Secretary at a total cost of \$178. Storage will be provided free of charge.

**Table I-4 Record Keeping Costs**

Secretarial services:	\$178.00
Total	<u>\$178.00</u>

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